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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/777,225 | 02/13/2004 | Laura Maria Zanibelli | 248903US0XCONT | 2498 |

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| EXAMINER |
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NGUYEN, TAM M

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| ART UNIT | PAPER NUMBER |
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1764

DATE MAILED: 11/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/777,225

Applicant(s)

ZANIBELLI ET AL.

Examiner

Tam M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 6-13, 16-18, 27 and 28 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1, 2, 6-13, 16-18, 27, and 28 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-2, 6-13, 16-18, 27 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The expression "NI/I" in claims 1 and 28 renders the claims indefinite because it is unclear what does it means.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 6-13, 16-18, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hart (3,156,640) in view of Bellussi et al. (EP-340868).

Hart discloses a process for the simultaneous isomerization of olefins and hydrodesulfurization of a hydrocarbon feed mixture which has a boiling point (0 to 250° C) within the gasoline range or naphtha range by contacting the feed mixture with catalyst comprising a metal from group VI (e.g., Mo), a metal from VIII (e.g., Co), and a silica-alumina carrier comprising at least 60 wt. % of silica wherein the total metals on the catalyst is in the range of from 0.5 to 15 wt. %. Hart also discloses that the sulfur content of the sulfur-containing hydrocarbon oil fraction is in the range of from 0.05 to 0.15 wt. %. The process is operated at a LHSV of from 0.5 to 20, at a temperature of from 100-500° C, at a pressure of from 10 to 80 atm (10-82 kg/cm²). (See entire patent)

Hart does not specifically disclose that the catalyst has physical characteristics as claimed. However, Bellussi discloses a composition of a catalyst which has the same physical characteristics as the claimed catalyst (see page 1 through page 4). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have

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modified the process of Hart by using a catalyst which has physical characteristics as taught by Bellussi because such a catalyst is effective in a process of isomerization of olefins.

Hart does not specifically disclose that the WHSV is ranged from 2 to 6 and does not specifically disclose the quantity of hydrogen ranging from 200 to 400 times the quantity of hydrocarbon present.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Hart by using the claimed WHSV because Hart teaches that the process is operated at LHSV of from 0.5 to 20 h⁻¹, although lower or higher velocities may also be used (see col. 4, line 73 through col. 5, line2). Therefore, one of skill in the art would utilize any velocity including the claimed velocities with the expectation that any velocities of from 0.5 to 20 h⁻¹ (LHSV) would give similar results as a velocity of from 2-6 (WHSV).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Hart by utilizing the claimed hydrogen to hydrocarbon ratios because it is within the level of one of skill in the art to utilize an effective ratio that results in higher conversion including utilizing the claimed ratios.

Since the modified process of Hart is essentially similar to the claimed process, it would be expected that the modified process of Hart would have the HYD/ISO ratio as claimed.

Response to Arguments

The argument that the examples of Hart only describes a catalyst base on nickel as the catalytically active metal; thus, the catalyst of the reference does not have to be a combination of cobalt and molybdenum is not persuasive because Hart teaches that the metal of Group VIII can be cobalt and the metal of Group VIB can be Molybdenum. The invention of Hart does not limit to its examples.

The argument that Hart does not teaches the claimed hydrogenation conditions are not persuasive because of the new rejection above.

The argument that Hart does not teach the claimed ratio of HDS/HYD is not persuasive because the examiner maintains that the modified process of Hart is essentially similar to the claimed process, it would be expected that the modified process of Hart would have the HYD/ISO ratio as claimed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tam M. Nguyen whose telephone number is (571) 272-1452. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tam M. Nguyen
Examiner
Art Unit 1764

TN



10/28/05